

What is claimed is:

1. A portable communications device producing a visual signal upon ringing, comprising:
  - a. a portable communications device including an outer cover and a main circuit board assembly, said portable communications device further including a ringing transducer, a power source and a transducer power circuit extending therebetween, producing a ring tone which varies in frequency, amplitude and duration, said transducer power circuit having a portion physically exposed and electrically conductive to provide first and second contact points;
  - b. a substrate;
  - c. a bus line mounted on said substrate, said bus line including a pair of conductors;
  - d. at least one light emitting device connected to said pair of conductors; and
  - e. first and second interconnection leads each respectively connected to one of said pair of conductors, said first and second interconnection leads having a portion extending away from said substrate and having first and second remote end terminals, and said first and second remote end terminals connected respectively to said first and second contact points.
2. A device as in claim 1 further including a display.
3. A device as in claim 1 further including call buttons.
4. A device as in claim 1 in which said outer cover is translucent.

5. A device as in claim 1 in which said substrate is essentially coextensive with the shape, size and configuration of said main circuit board assembly.

6. A device as in claim 1 in which said substrate is a thin, flexible material.

7. A device as in claim 6 in which said thin, flexible material is a plastic.

8. A device as in claim 1 in which said substrate is transparent.

9. A device as in claim 1 in which said substrate further includes means for securing said substrate to said main circuit board assembly.

10. A device as in claim 9, in which said means consists of at least one clip on said substrate.

11. A device as in claim 10, in which said clip means consists of a portion of said substrate which is folded under or over to form said clip.

12. A device as in claim 1, in which said first and second remote end terminals are sized and positioned to be in contact, respectively, with said first and second contact points.

13. A device as in claim 1, in which said substrate on which said bus line is mounted consists of a portion of said outer cover.

14. A device as in claim 1, in which said substrate on which said bus line is mounted consists of a portion of said main circuit board assembly.

5 15. A device as in claim 1, wherein said portable communications device is a cellular telephone.

16. A device as in claim 1, wherein said portable communications device is a paging device.

17. A device as in claim 1, wherein said portable communications device is a 2-way radio.

18. A device as in claim 18, in which said ringing transducer is a ringer.

19. A device as in claim 18, in which said ringing transducer is a buzzer.

15 20. A device as in claim 18, in which said ringing transducer is a speaker.

21. A device as in claim 18, in which said audible sounds produced are musical tones.

22. A device as in claim 1, in which said light emitting device is a light emitting diode.

20 23. A device as in claim 1, in which said light emitting device is an incandescent light.

24. A device as in claim 1, in which said light emitting device produces a clear light.

25. A device as in claim 1, in which said light emitting device produces a white light.

26. A device as in claim 1, in which said light emitting device produces a colored light.

5           27. A device as in claim 1, in which said light emitting device is illuminated through an opening in said outer cover.

28. A device as in claim 1, wherein said substrate further includes at least one cut-out portion.

29. A device as in claim 1, wherein said substrate further includes one or more holes.

30. A device as in claim 1, wherein said substrate further includes one or more perforations.

15           31. A device as in claim 1, wherein said bus line is mounted on said substrate by means of an adhesive tape placed over said bus line.

32. A device as in claim 1, wherein said bus line is mounted on said substrate by means of placing said bus line between two laminated layers forming said substrate.

20           33. A device as in claim 1, wherein said bus line is mounted on said substrate by means of a thin film placed over said bus line on said substrate.

34. A portable communications device producing a visual signal upon ringing, comprising:

a. a portable communications device including an outer cover and a main circuit board assembly, said portable communications device further including a ringing transducer, a power source and a transducer power circuit extending therebetween, producing a ring tone which varies in frequency, amplitude and duration, said transducer power circuit having a portion physically exposed and electrically conductive to provide first and second contact points;

b. a substrate;

c. a bus line mounted on said substrate, said bus line including a pair of conductors;

d. at least one light emitting device connected to said pair of conductors; and

e. means for interconnecting said bus line with said power source activated by ringing of the portable communications device.

35. An apparatus producing a visual signal upon ringing of a portable communications device,

comprising:

a. a substrate;

b. a bus line mounted on said substrate, said bus line including a pair of conductors;

c. at least one light emitting device connected to said pair of conductors; and

d. first and second interconnection leads each respectively connected to one of said pair of conductors, and having first and second conductor terminals which extend away from said substrate.

36. An apparatus producing a visual signal upon ringing of a portable communications device,  
comprising:

- a. a substrate;
- b. a bus line mounted on said substrate, said bus line including a pair of conductors;
- c. at least one light emitting device connected to said pair of conductors; and,
- d. means for interconnecting said bus line with a power source activated by ringing  
of the portable communications device.

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